

**ABSTRACT**

The present invention relates to a plate heat exchanger and its method of construction. A pair of round corrugated heat transfer plates provide a cassette with the corrugations of one heat exchanger plate angled relative to the other so as to form angular channels for fluid flow of a primary fluid and a secondary fluid. A plurality of the corrugated cassettes are contained within a housing and are provided with a pair of port holes. The housing is in the form of a cylindrical shell and includes a bottom cover member and a top cover member. The cylindrical shell has an inlet nozzle and an outlet nozzle on opposed sides of the shell for the secondary fluid while the top cover member is provided with an inlet nozzle and an outlet nozzle for a primary fluid. The nozzles of the top cover member are aligned with port holes formed in each of the cassettes. Depending on the type of use, either the portholes or the cassette outer edge may be welded, with gaskets used alternately on the fouling side(s). A gasketed or semi-gasketed heat exchanger allows the unit to be cleaned on the gasketed side of the unit when fouling is a concern. A spring device is provided on the bottom of the housing to compensate for any mechanical or thermal expansion of the cassettes that may occur during operation of the heat exchanger. Also, a special seal is provided for preventing short-circuiting of the fluid as it passes through the heat exchanger.